

What is claimed is:

1. A chip type power inductor comprising:

a stack body where a magnetic substance which forms a magnetic core
5 stacked with a plurality of layers and non-magnetic layers inserted to inside of the
magnetic substance which forms a magnetic core are formed as one unit;

coil patterns formed on either upper surfaces or lower surfaces of the
plurality of layers of the magnetic substance which forms a magnetic core;

via holes formed at the plurality of layers constituting the magnetic
10 substance which forms a magnetic core in order to electrically connect the coil
patterns;

cover layers in contact with upper and lower surfaces of the magnetic
substance which forms a magnetic core; and

external electrodes electrically connected to a part of the coil patterns.

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2. The chip type power inductor of claim 1, wherein each layer
constituting the magnetic substance which forms a magnetic core includes:

a non-magnetic electrode layer having an opening at a center thereof and
electrode patterns on at least one surface of upper and lower surfaces thereof;

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a magnetic layer positioned at the center opening and lateral surfaces of
the non-magnetic electrode layer,

in which the non-magnetic electrode layer and the magnetic layer
constitute one layer.

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3. The chip type power inductor of claim 1, wherein the cover layer further includes a non-magnetic layer.

4. The chip type power inductor of claim 1, further comprising a
5 buffer layer constituted as a non-magnetic layer between upper and lower surfaces of the magnetic substance which forms a magnetic core and the cover layer.

5. The chip type power inductor of claim 1, wherein the non-
10 magnetic layer is composed of B_2O_3 - SiO_2 based glass, Al_2O_3 - SiO_2 based glass, or other ceramic material.

6. The chip type power inductor of claim 1, wherein the magnetic
15 substance is composed of Ni-based ferrite, Ni-Zn based ferrite, Ni-Zn-Cu based ferrite, and etc.

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7. A fabrication method of a chip type power inductor comprising:
preparing green sheets that a magnetic layer and a non-magnetic layer
are respectively formed on a carrier film;
20 forming cutting lines on the magnetic layer green sheet and the non-magnetic layer green sheet;
forming via holes on the non-magnetic layer green sheet where the cutting
lines are formed, and forming an electrode pattern at an upper surface of the non-magnetic layer green sheet;
25 picking up unnecessary parts from the magnetic layer green sheet and the

non-magnetic layer green sheet and thus corresponding remaining parts of the magnetic substance to the picked up parts of the non-magnetic substance or corresponding the picked up parts of the magnetic substance to remaining parts of the non-magnetic substance;

5 stacking a plurality of layers by constituting the magnetic layer and the non-magnetic layer where via holes and electrode patterns are formed as one unit in a state that a non-magnetic layer where cutting lines and electrode patterns are not formed is inserted;

 stacking a cover layer composed of a magnetic layer at upper and lower
10 surfaces of the stacked layers;

 firing the stacked body; and

 forming external electrodes at an outer surface of the fired stack body.

8. The method of claim 7, wherein the magnetic layer or the non-
15 magnetic layer on the carrier film are respectively formed by using a doctor blade tape casting method.

9. The method of claim 7, wherein the electrode pattern of an upper surface of the non-magnetic layer green sheet is formed by a screen printing.

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10. A chip type power inductor fabricated by a method of claim 7.